PROMOTION RECOMMENDATION
The University of Michigan
School of Dentistry

Lucia H.S. Cevidanes, associate professor of dentistry, with tenure, School of Dentistry, is recommended for promotion to professor of dentistry, with tenure, School of Dentistry.

Academic Degrees:

PhD	2003	University of North Carolina
MS	1994	Instituto Metodista de Ensino Superior, São Paulo, Brazil
DDS	1989	Universidade Federal de Goias, Go, Brazil

Professional Record:

2016-present	Associate Professor, with tenure, Department of Orthodontics and Pediatric Dentistry, University of Michigan, Ann Arbor
2011-2016	Assistant Professor, Department of Orthodontics and Pediatric Dentistry, University of Michigan, Ann Arbor
2005-2011	Clinical Assistant Professor, Department of Orthodontics, University of North Carolina, Chapel Hill
2005-2007	Pre-doctoral Clinic Director, Department of Orthodontics, University of North Carolina, Chapel Hill
2003-2005	Clinical Instructor, Department of Orthodontics, University of North Carolina, Chapel Hill
2003-2005	Post-Doctoral Fellow, Department of Orthodontics, University of North Carolina, Chapel Hill
2002-2003	Adjunct Instructor, Department of Orthodontics, University of North Carolina, Chapel Hill

Summary of Evaluation:

Teaching: Professor Cevidanes teaches extensively at the School of Dentistry. She is the director of the pre-doctoral orthodontic program teaching didactic, clinical, and laboratory courses. She is the course director of two didactic courses and three laboratory courses involving orthodontics. She is also the course director of two graduate preclinical laboratory courses. She has enhanced the pre-doctoral students' educational experience by improving faculty communication and calibration, leading a faculty-driven review of the curriculum, and holding faculty retreats, with resulting changes in the use of digital scanners, clear aligners, and 3D movement simulations. During the COVID-19 pandemic, changes in her courses associated with videos, simulations, and synchronous lectures led to her receiving the School of Dentistry's 2020 Dentie Award for "Best Use of Synchronous Lecture Time." She is also an attending faculty in two graduate clinical orthodontic courses. Her student teaching reviews are consistently positive with high remarks. In rank, she has mentored one PhD student, 18 Master of Science students, eleven visiting scholars, four post-doctoral trainees, two pre-doctoral dental students, six undergraduate students, and two research fellows. She has also given 13 continuing education courses at the regional, national and international levels. The work of her students is frequently recognized with awards, such as the American Association of Orthodontics Thomas Graber

Award of Special Merit (2017-2019), the American Association for Dental Research travel award (2017-2019), the International Association for Dental Research Brazilian Division Unilever Hatton Division Award (2020), and the University of Michigan School of Dentistry Research Day, 2nd place, Research Fellow Award (2020). In 2019, Professor Cevidanes received the University of Michigan School of Dentistry, Alpha Omega Teaching Excellence Award.

Research: Professor Cevidanes is a successful researcher who has been funded throughout her career at the University of Michigan. Her research focuses on craniofacial growth and development, with an emphasis on use of cone beam CT as a diagnostic and outcomes assessment tool for craniofacial problems. She also works on the development of a decision-support system for Temporomandibular Joint (TMJ) health and risk prediction. Her scholarship is collaborative. Currently, she has two active grants as the principal investigator, including an R01(2013-2024) investigating computer image analysis and statistical modeling, and an R03 (2020-2021). Combined these grants total over $3,000,000. While in rank she also had an R21 grant and two American Association of Orthodontics Foundation grants. She has a total of 183 peer reviewed publications, 91 while in rank (25 as a senior author, H-index 42), all in well recognized journals such as the *Journal of Dental Research*, *Dentomaxillofacial Radiology*, and *International Oral Maxillofacial Surgery*. She also published six book chapters while in rank. Her publications have allowed her to develop a significant national and international reputation, which has resulted in 18 invited presentations at professional meetings. Professor Cevidanes has been recognized with two prestigious research awards while in rank: the 2018 American Association of Orthodontics Foundation Fred Schudy Memorial Research Award, and the 2020 American Association of Orthodontics Foundation B.F. Dewel Memorial Biomedical Research Award. Her scholarship has led her to develop a host of 3D imaging analysis tools in craniofacial research, through continued collaboration with the image analysis research groups at the University of North Carolina, Massachusetts Institute of Technology, University of Utah, University of California, Los Angeles, Georgia Institute of Technology, University of Bern, and University of Pennsylvania. This includes the ITK-SNAP tool software application used to segment structures in 3D imaging, the CMF application, and the National Alliance of Medical Image Computing shape analysis toolkit.

Recent and Significant Publications:
Shoukri B, Prieto JC, Ruellas A, Yatabe M, Sugai J, Styner M, ZhuH, Huang C, Paniagua B, Aronovich S, Ashman L, Benavides E, de Dumast P, Ribera NT, Mirabel C, Michoud L, Allohaibi Z, Ioshida M, Bittencourt L, Fattori L, Gomes LR, Cevidanes L. Minimally Invasive Approach for Diagnosing TMJ Osteoarthritis. *J Dent Res*. 2019;98(10):1103-1111. Doi: 10.1177/0022034519865187.
Bianchi J, Goncalves JR, Ruellas ACO, Vimort JB, Yatabe M, Paniagua B, Hernandez P, Benavides E, Soki FN, Cevidanes LHS. Software comparison to analyze bone radiomics from high resolution CBCT scans of mandibular condyles. *Dentomaxillofac Radiol*. 2019;48(6):20190049. Doi: 10.1259/dmfr.20190049. *Epub* 2019 May 20.
Bianchi J, Goncalves JR, Ruellas ACO, Ashman LM, Yatabe MS, Vimort JB, Paniagua B, Hernandez P, Benavides E, Ioshida M, Soki FN, Cevidane L, Quantitative Bone Imaging Biomarkers to Diagnose Temporomandibular Joint Osteoarthritis. *Int J Oral Maxillofac Surg*. 2020; 2020; 27:S0901-5027(20)30163-6.doi: 10.1016/j.ijom.2020.04.108.

Bianchi J, de Oliveria Ruellas AC, Goncalves JR, Paniagua B, Prieto JC, Styner M, Li T, Zhu H, Sugai J, Giannobile W, Benavides E, Soki F, Yatabe M, Ashman L, Walker D, Soroushmehr R, Najarian K, Cevidanes LHS. Osteoarthritis of the Temporomandibular Joint can be diagnosed earlier using biomarkers and machine learning. *Sci Rep.* 2020; 15;10(10):8012. Doi: 10.1038/s41598-202-64942-0.

Ehardt L, Ruellas A, Edwards S, Benavides E, Ames M, Cevidanes L. Long-term Stability & Condylar Remodeling Following Mandibular Advancement: A Five-Year Follow-up. *Am J Orthod Dentofacial Orthop.* 2021 Mar 10:S 0889-5406(21)00035-4. Doi: 10.1016/j.ajodo.2019.11.022.

Service: Professor Cevidanes holds several important administrative appointments at the University of Michigan, including serving as the director of pre-doctoral orthodontics and serving as the discipline coordinator for orthodontics. At the campus level, she is an active member of the Center for Computational Medicine and Bioinformatics, the Michigan Institute for Data Science, and the Michigan Integrative Musculoskeletal Health Core Center. She also serves on other committees at the school including Graduate Orthodontics Admission Committee, the Moyers Symposium Planning Committee, and the Oral Health Science PhD Program. She has also been highly involved in service commitments nationally and internationally. Nationally, she is a member and contributing author of the National Institutes of Health (Oral Health in America: Advances and Challenges), Panelist for the National Advisory Dental and Craniofacial Research Council, and NIDCR standing member of the DSR Special Grants Review Committee. Internationally, she is a member of the MRI in Orthodontics International Association of DentoMaxilloFacial Radiology working group, and a member of the Digital Dentistry Society. She is a grant reviewer for National Institutes of Health (2016-present), and National Institute of Dental and Craniofacial Research (2017-present), and serves as the associate editor for BMC Journal of the Digital Dentistry Society.

External Reviewers:
Reviewer A: "I used the ICite metrics to evaluate the overall impact of her publications. I examined 97 of her publications (published since 2002). The overall mean Relative Citation Score was 3.00. Overall, her articles were cited thrice more than a typical NIH-funded article after adjustment for field specific citations. This is unusually high for an Orthodontic faculty member. I have never seen such high scores amongst comparable peers. For example, my Relative Citation Ratio is 1.12 and I am already a tenured professor. Furthermore, over 20 of her publications are ranked more than the 90th percentile."

Reviewer B: "...it is clear that professor Cevidanes is an over achiever who is genuinely committed to dental research and teaching. She is highly valued by the orthodontic profession because of her passion and contributions. Her accomplishments and future potential exceed most of her orthodontic peers."

Reviewer C: "In reviewing Professor Cevidanes' curriculum vitae, I have only one question. Why did the university wait so long to promote her to professor? She is one of the top ten academic orthodontists in the world...Most professors in orthodontics have never been a

principal investigator on an NIH grant. Professor Cevidanes has had many and currently is funded through 2024 as PI on a 2.8 million dollar grant."
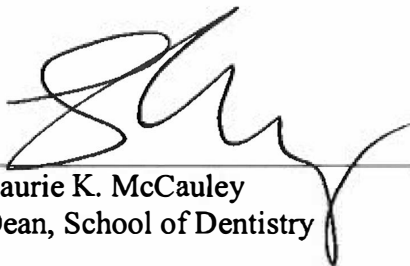
Reviewer D: "Dr. Cevidanes is amongst the pioneers and leaders in the field of 3D imaging in the dental research community. The novel tools generated by her research work have stimulated a new era of dental research, allowing doctors to better target specific questions and further advance dental science."

Reviewer E: "...she has devoted herself in developing videos, group discussions, and skill practices to enhance engagement with the students for better learning experiences. Her teaching philosophy is to elevate leadership, passion, participation, and respect."

Reviewer F: "For two of her papers, she received the prestigious BF and Helen E Dewel Award from the American Association of Orthodontics; this is an astonishing achievement and indicative of the clinical relevance of the information she disseminates."

<u>Summary of Recommendation:</u>
Professor Cevidanes is a passionate and caring teacher, who strives to ensure students can critically think to diagnose and learn how to incorporate all the technological advances in orthodontics towards personalized care. Her career has focused on playing a critical role in developing an orthodontic curriculum for general dentists. Her scholarly studies are interdisciplinary in nature, and have had high impact in the field of orthodontics. She is considered as the world's foremost authority on the application of Cone Beam Computed Tomography to orthodontic research. Her mentees are from various cultures and ethnic backgrounds. She is committed to equitable treatment in the classroom, patient care, research and service in her service activities. Her service contributions are important and extend to the university, national and international levels. It is with the support of the Executive Committee that I recommend Lucia H.S. Cevidanes for promotion to professor of dentistry, with tenure, School of Dentistry.

Laurie K. McCauley
Dean, School of Dentistry

May 2022